REMARKS

Claims 1-10 are pending in this application. By this Amendment, claims 1, 2 and 9 are amended. Claims 1, 2 and 9 are amended for clarity. No new matter is added. Claim 11 is canceled without prejudice to, or disclaimer of, the subject matter recited in that claim. Reconsideration of the application in view of the above amendments and the following remarks is respectfully requested.

Applicants appreciate the courtesies shown to Applicants' representative by Examiners Enin-Okut and Yuan during the May 12 personal interview. Applicants' separate record of the substance of the personal interview is incorporated in the following remarks.

The Office Action, on page 2, objects to claim 11 for an informality. Claim 11 is canceled rendering the objection moot.

The Office Action, on page 3, rejects claims 2-8 and 10 under 35 U.S.C. §112, second paragraph. This rejection is respectfully traversed.

Claim 2 is amended to overcome the rejection. Claim 2 recites a reformed water quantity calculation step for obtaining a quantity of generated water, which is a quantity of water present in the cathode channel following generation in the fuel cell.

Accordingly, reconsideration and withdrawal of the rejection of claims 2-8 and 10 under 35 U.S.C. §112, second paragraph, are respectfully requested.

The Office Action, on page 4, rejects claim 11 under 35 U.S.C. §103(a) as being unpatentable over U.S. Patent No. 4,128,700 to Sederquist in view of U.S. Patent Application Publication No. 2002-0031450 to Yamashita et al. (hereinafter "Yamashita"). The cancellation of claim 11 renders this rejection moot.

The Office Action, on page 6, rejects claims 1 and 9 under 35 U.S.C. §103(a) as being unpatentable over Sederquist in view of Yamashita and further in view of U.S. Patent No. 5,441,821 to Merritt et al. (hereinafter "Merritt"). The Office Action, on page 7, rejects claims

2-8 and 10 under 35 U.S.C. §103(a) as being unpatentable over Sederquist in view of Yamashita, Merritt and JP-A-2000-195534 to Aoyama. These rejections are respectfully traversed.

Claim 1 recites, among other features, a reformed oxygen quantity calculation step ... and a reformed carbon quantity correction step. Claim 9 recites similar features.

Sederquist is directed to a fuel cell power plant. The Office Action asserts that Sederquist teaches many of the features recited in independent claims 1 and 9. The Office Action concedes that Sederquist fails to teach the claimed cathode pump, detecting means for supplied fuel quantity, supplied cathode gas quantity and generated power quantity, or a control device for controlling delivery of reform-subject fuel.

The Office Action asserts that a combination of Sederquist with Yamashita and Merritt would have rendered obvious the combinations of all of the features recited in independent claims 1 and 9. This conclusion of the Office Action is unreasonable for at least the following reason.

None of the currently-applied references can reasonably be considered to teach, or to have rendered obvious, the claimed reformed oxygen quantity calculation step that calculates a value "O" and reformed carbon quantity correction step that corrects a value "C," which are used to maintain a ratio of O/C in a target range.

To generate power stability and efficiency in a fuel cell system, it is important to keep the ratio O/C at an appropriate level. O/C is a proportion of a reformed oxygen quantity O against that of a reformed carbon quantity C which are supplied to the reformed reaction flow channel. The reformed oxygen quantity O supplied to the reform reaction flow channel is greatly influenced by power generation in the fuel cell and may fluctuate with the power generation condition in the fuel cell.

Because the reformed oxygen quantity O may be influenced to fluctuate with the power generation condition in the fuel cell, a reformed carbon quantity and a reformed oxygen quantity are calculated and the ratio O/C is determined. When the reformed carbon quantity calculation step is performed, a consumed oxygen quantity during a process where power is actually generated in the fuel cell is calculated and subtracted from the supplied oxygen quantity in the cathode gas supplied to the cathode gas flow channel, to calculate a residual oxygen quantity left unused in the cathode gas. Based on this residual oxygen quantity, a reformed oxygen quantity O supplied from the reform reaction flow channel is calculated. Therefore, a value of this reformed oxygen quantity O is given taking into account power generation condition of the fuel cell, thus providing a reference for correcting the ratio O/C into a target range.

In the reformed carbon quantity correction step, on the other hand, a control device changes a delivery of the fuel pump so that the ratio O/C may fall in the target range. It is, therefore, possible to correct a proportion of the reformed carbon quantity C against the reformed oxygen quantity O, which serves as a reference.

Further, because a reformed carbon quantity C is corrected corresponding to a reformed oxygen quantity O, which is calculated based on the residual oxygen quantity, O/C can be kept in an appropriate range without mounting a control valve for controlling the reformed oxygen quantity O supplied to the reformed reaction flow channel.

It is for this reason that the claimed fuel cell system control method enables the ratio O/C and the reform reaction flow channel to be kept to an appropriate value by using a reformed oxygen quantity O, which is calculated by assuming an actual power generation condition in the fuel cell without complicating the fuel cell system, by adding a control valve, for instance, as discussed above..

Accordingly, in view of the above advantage of determining the ratio O/C using the claimed oxygen quantity calculation step and carbon quantity correction step, and in view of a

fact that none of the references can be considered to teach this feature, one of ordinary skill would not have predictably modified any of the currently-applied references to have rendered obvious the combinations of all the features recited in independent claims 1 and 9. Further, dependent claims 2-8 and 10 would also not have been rendered obvious for at least the dependence of these claims on independent claims 1 and 9, as well as for the separately patentable subject matter that each of these claims recites.

Accordingly, reconsideration and withdrawal of the rejections of claims 1-10 under 35 U.S.C. §103(a) over the various combinations of currently-applied references are respectfully requested.

Applicants' representatives presented arguments regarding the reasonableness of the combinability of the currently-applied references. In view of the discussion with the Examiners, Applicants amend the claims for clarity and submit the above arguments.

In view of the foregoing, Applicants respectfully submit that this application is in condition for allowance. Favorable reconsideration and prompt allowance of claims 1-10 are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number listed below.

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